SEQUENCE LISTING

<110> Bond, Christoper J.

<120> SYNTHETIC ANTIBODY PHAGE LIBRARIES

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<141> 2004-01-16

<150> US 60/441,059
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<150> US 60/488,610
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<151> 2003-10-08

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Tyr Ser Ala Ser Phe Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly
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Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
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Ala Arg Ile Tyr Pro Thr Asn Gly Tyr Thr Arg Tyr Ala Asp Ser Val
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Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr
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Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
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aggaccatag attatgaaaa taaaaacagg tgcacgcatc ctcgcattat ccgcattaac 180

gacgatgatg ttttccgcct cggcttatgc atccgatatc cagatgaccc agtccccgag 240

ctccctgtcc gcctctgtgg gcgatagggt caccatcacc tgccgtgcca gtcaggatgt 300

gaatactgct gtagcctggt atcaacagaa accaggaaaa gctccgaagc ttctgattta 360

ctcggcatcc ttcctctact ctggagtccc ttctcgcttc tctggtagcc gttccgggac 420

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gacgatgatg ttttccgcct cggcttatgc atccgatatc cagatgaccc agtccccgag 240

ctccctgtcc gcctctgtgg gcgatagggt caccatcacc tgccgtgcca gtcaggatgt 300

gaatactgct gtagcctggt atcaacagaa accaggaaaa gctccgaagc ttctgattta 360

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ctccgaggtt cagctggtgg agtctggcgg tggcctggtg cagccagggg gctcactccg 660

tttgtcctgt gcagcttctg gcttcaacat taaagacacc tatatacact gggtgcgtca 720

ggccccgggt aagggcctgg aatgggttgc aaggatttat cctacgaatg gttatactag 780

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Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Xaa Met Asp
1 5 10 15

Tyr

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Ser Arg Trp Lys Tyr Ala Thr Arg Tyr Ala Met
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<400> 69

Ser Arg Ser Arg Gly Trp Trp Thr Ala Ala Met
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<400> 70

Ser Arg Ala Ser Arg Asp Trp Tyr Gly Ala Met
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<400> 71

Thr Thr Ser Asn Gly
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Ala Tyr Ser Ser Asn Tyr Tyr Arg
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Ala Arg Trp Ser Arg Ala Ser Phe Tyr
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Thr Thr Gly Thr Asp
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Ala Ile Thr Tyr Asp Ser Tyr Arg
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Ala Lys Ala Gly Asp Arg Glu Gly Tyr
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Thr Thr Asp Ser Gly
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Gly Arg Ser Tyr Ser Ser Asn Arg
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Ala Lys Trp Pro Trp Tyr Asn Ala Trp
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Gly Tyr Ser Tyr Gly Thr Arg
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Thr Thr Gly Asn Ala
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Thr Asn Asp Tyr Tyr
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Thr Ser Asn Thr Gly
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Thr Thr Ser Tyr Gly
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Ala Ser Ser Tyr Ser Tyr Arg
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Gly Tyr Asn Ser Gly Ser Arg
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Thr Ser Ser Ser Ala
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Ala Trp Ser Asn Gly Ser Arg
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Thr Thr Asn Thr Trp
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Gly Asp Tyr Asp Gly Tyr Arg
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Ala Xaa Trp Arg Trp Trp Gly Arg Tyr
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Thr Asn Gly Asn Tyr
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Gly Trp Ser Asn Gly Tyr Arg
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Thr Ser Asn Asn Ala
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Gly Arg Ser Tyr Asn Tyr Arg
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Thr Thr Ser Asn Asp
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Ala Trp Ser Tyr Asn Tyr Arg
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Thr Gly Asn Ser Trp
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Val Ala Thr Tyr Tyr Asn
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Trp Gly Ala Lys Gly Thr Trp
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Asn Ala Asp Ser Ala
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Tyr Ala Tyr Asp Tyr Tyr
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Trp Gly Trp Thr Thr Asn Gly
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Asn Asp Asn Thr Ala
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Val Ser His Asp Thr Tyr
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Trp Gly Trp Glu Thr Asp Gly
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Leu Asp Ser Ser Tyr Asp
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Ser Arg Ala Gly Tyr Thr Tyr
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Asn Gly Lys Ser Ser
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Trp Ser Tyr Glu Ala Ala
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Trp Gly Trp Glu Ala Asn Trp
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Val Tyr Thr Tyr Tyr Asp

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Val Ser Asp Tyr Tyr Asp
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Ser Ala Gly Tyr Asp
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Leu Ala Tyr Ala Tyr Asn
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Ala Ala Ala Trp Ala Ser Tyr
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<211> 5
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Thr Thr Glu Ser Gly
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<223> mVEGF-179 CDRH2

<400> 133

Val Tyr His Asp Lys Tyr
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<210> 134
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Trp Trp Tyr Ser Trp Asn Trp
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<211> 389
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<400> 135
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cctgtgctgc ctcgggtcgt actggttcta cttatgatat gggctggttt cgtcaggctc 120

cgggtaaaga acgtgaatcg gttgccgcca ttaactggga ttcggctcgt acttactatg 180

cttcgtccgt ccgtggtcgt tttactattt cacgtgataa tgccaaaaaa actgtctatt 240

tgcagatgaa ttcattgaaa ccagaagata ctgccgtcta tacttgtggt gctggtgaag 300

gcggtacttg ggattcttgg ggtcagggta cccaggtcac tgtctcctct gccggtggta 360

tggattataa agatgatgat gataaatga 389

<210> 136
<211> 129
<212> PRT
<213> Artificial Sequence

<220>
<223> VHH anti-HCG monobody

<400> 136

Asp Val Gln Leu Gln Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Arg Thr Gly Ser Thr Tyr
20 25 30

Asp Met Gly Trp Phe Arg Gln Ala Pro Gly Lys Glu Arg Glu Ser Val
35 40 45

Ala Ala Ile Asn Trp Asp Ser Ala Arg Thr Tyr Tyr Ala Ser Ser Val
50 55 60

Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Lys Thr Val Tyr

65 70 75 80

Leu Gln Met Asn Ser Leu Lys Pro Glu Asp Thr Ala Val Tyr Thr Cys
85 90 95

Gly Ala Gly Glu Gly Gly Thr Trp Asp Ser Trp Gly Gln Gly Thr Gln
100 105 110

Val Thr Val Ser Ser Ala Gly Gly Met Asp Tyr Lys Asp Asp Asp Asp
115 120 125

Lys

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Cys Gly Ala Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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Xaa Xaa Xaa Xaa Xaa Trp Gly
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Arg Ile Xaa Cys

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Cys Trp Val Thr Trp
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<210> 140
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<222> (20)..(20)
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<222> (21)..(21)
<223> Xaa is V, L, P, G, S, E or W

<400> 140

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa
20

<210> 141
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<223> Xaa is I, L, V, R, W or S

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<400> 141

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1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20

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<223> Xaa is any naturally occurring amino acid;

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<222> (23)..(23)
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<222> (24)..(25)
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Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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<223> Xaa is any naturally occurring amino acid

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<222> (5)..(24)
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Arg Xaa Xaa Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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<400> 144

Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Trp Xaa Xaa Xaa Xaa Xaa
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1 5 10 15

Xaa

<210> 146
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Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Xaa Arg Val Xaa
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Xaa

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Arg Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp Xaa Xaa Xaa Xaa
1 5 10 15

Xaa

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<400> 148

Leu Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp Xaa Xaa Leu Xaa
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Xaa

<210> 149
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<400> 149

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Arg Xaa Xaa Arg
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nnsnnsnnsn nsnnstgggg tcagggt 87

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kccksggytr ctksgtgggg tcagggt 87

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rctsstgyts makcctgggg tcagggt 87

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kytgstsytg ytgsttgggg tcagggt 87

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gmarygscas ytgcgtgggg tcaggg 86

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Arg Ile Xaa Cys
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Phe Xaa Arg Val
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Trp Xaa Xaa Leu
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Trp Xaa Met Pro
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<400> 163

Arg Ile Gly Arg Ser Val Phe Asn Leu Arg Arg Glu Ser Trp Val Thr
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Trp

<210> 164
<211> 17
<212> PRT
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<220>
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<400> 164

Leu Leu Arg Arg Gly Val Asn Ala Thr Pro Asn Trp Phe Gly Leu Val
1 5 10 15

Gly

<210> 165
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<212> PRT
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Val Leu Lys Arg Arg Gly Ser Ser Val Ala Ile Phe Thr Arg Val Gln
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Ser

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Arg Leu Val Asn Gly Leu Ser Gly Leu Val Ser Trp Glu Met Pro Leu
1 5 10 15

Ala

<210> 167
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<212> PRT
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Phe Val Ala Gly Pro Trp Trp Trp Arg Trp Arg Thr Pro Ser Gly Val
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Ala

<210> 168
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<212> PRT
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<220>
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Val Leu Glu Leu Arg Ser Ser Gly Gly Asn Ala Arg Trp Met Ser Leu
1 5 10 15

Tyr

<210> 169
<211> 17
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Tyr

<210> 170
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Leu Trp Thr Arg Ala Arg Ser Trp Arg Trp Trp Trp Arg Arg Glu Gln
1 5 10 15

Phe

<210> 171
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<220>
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1 5 10 15

Ala

<210> 172

<211> 17
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<220>
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Lys Ser Thr Arg Trp Arg Ala Gly His Gly Arg Thr Phe His Trp Leu
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Ser

<210> 173
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<400> 173

Ala Xaa Xaa Xaa Xaa Trp Xaa Xaa Xaa Tyr Ala Met Asp Tyr
1 5 10

<210> 174
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<400> 174

Ala Xaa Xaa Xaa Xaa Trp Xaa Xaa Tyr Ala Met Asp Tyr
1 5 10

<210> 175
<211> 14
<212> PRT
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<400> 175

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1 5 10

<210> 176
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<400> 176

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp Tyr Ala Met Asp Tyr
1 5 10

<210> 177
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Ala Xaa Xaa Xaa Xaa Xaa Phe Asp Tyr
1 5

<210> 178
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<212> PRT
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<220>
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<400> 178

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Asp Tyr
1 5 10

<210> 179
<211> 13
<212> PRT
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<220>
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<223> Xaa is A, C, D, G, H, N, P, R, S, T, or Y

<400> 179

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Phe Asp Tyr
1 5 10

<210> 180
<211> 14
<212> PRT

<213> Artificial Sequence

<220>
<223> F181

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<223> Xaa is any naturally occurring amino acid

<220>
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<223> Xaa is W, S, A, or G

<400> 180

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Met Asp Tyr
1 5 10

<210> 181
<211> 14
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<400> 181

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Ala Met Asp Tyr
1 5 10

<210> 182
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<223> Xaa is any naturally occurring amino acid

<400> 182

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Met Asp Tyr
1 5 10 15

<210> 183
<211> 11
<212> PRT
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<400> 183

Ala Xaa Xaa Xaa Xaa Xaa Tyr Ala Met Asp Tyr
1 5 10

<210> 184
<211> 12
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<400> 184

Ala Xaa Xaa Xaa Xaa Xaa Xaa Tyr Ala Met Asp Tyr
1 5 10

<210> 185
<211> 9
<212> PRT

<213> Artificial Sequence

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<223> F185

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<223> Xaa is D or A

<400> 185

Ala Xaa Xaa Xaa Xaa Xaa Phe Xaa Tyr
1 5

<210> 186
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> F190b

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<223> Xaa is R or K

<220>
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<222> (3)..(10)
<223> Xaa is any naturally occurring amino acid

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<223> Xaa is W, S, A, or G

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<222> (12)..(12)
<223> Xaa is A, V, or G

<400> 186

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Met Asp Tyr
1 5 10 15

<210> 187
<211> 16
<212> PRT
<213> Artificial Sequence

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<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Xaa is A, V, or G

<400> 187

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Met Asp Tyr
1 5 10 15

<210> 188
<211> 17
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<220>
<223> F190e

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<223> Xaa is W, S, A, or G

<220>
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<222> (14)..(14)
<223> Xaa is A, V, or G

<400> 188

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Met Asp
1 5 10 15

Tyr

<210> 189
<211> 7
<212> PRT
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<220>
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<400> 189

Trp Gly Gly Asp Gly Phe Tyr
1 5

<210> 190
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> F59

<220>
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<223> Xaa is A, C, D, E, G, K, N, R, S, T, Y or W

<400> 190

Ser Arg Trp Gly Xaa Xaa Xaa Xaa Xaa Ala Met Asp Tyr
1 5 10

<210> 191
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> mVEGF 130

<400> 191

Asn Ala Asp Ser Ala
1 5

<210> 192
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> mVEGF 174

<400> 192

Thr Gly Gly Ser Trp
1 5

<210> 193
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
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<222> (2)..(2)
<223> Xaa is I, L, or V

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Xaa is any naturally occurring amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa is C, R, or N

<220>
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<222> (5)..(20)
<223> Xaa is any naturally occurring amino acid, wherein there can be 1 or more deletions up to 15 deletions

<220>
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<223> Xaa is C, S, F, T, E, or D

<220>
<221> MISC_FEATURE

<222> (22)..(22)
<223> Xaa is W, G, R, or M

<220>
<221> MISC_FEATURE
<222> (23)..(23)
<223> Xaa is V, L, or P

<220>
<221> MISC_FEATURE
<222> (24)..(24)
<223> Xaa is T, V, L, or Q

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Xaa is W, G, or S

<400> 193

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20 25

<210> 194
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> CDRH3

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<222> (3)..(3)
<223> Xaa is any amino acid

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<222> (5)..(10)
<223> Xaa is any amino acid

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa is T, V, L, or Q

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Xaa is W, G, S, or A

<400> 194

Arg Ile Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Trp Val Xaa Xaa

1 5 10 15